Work Orde		00297		*100	1297*		`				Page 1
Revision ID:	D4148-1 Crosstube Lu	o Plate Fwd		Accept	*N900	<u>040</u>	100)* s	etup Sta Sto	I VI	S1* S2*
	4/22/13	Start Qty: 24.00 Req'd Qty: 24.00	*2; *2;		Cust Item I Customer:	I D:				I	
Approvals:		an: <u>M</u> しろ	Date: 13-04	- 2		ate:		R	tun Sta Sto	n '' \(\bar{\partial}{2}\)	R1* R2*
Sequence ID/ Work Center II	· ·	Operation Description		Set Up/ Run Hours	Tool ID	Tool#	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Re	vision Nbr	- To Make The constitution of Allack con-								
D4148	D								·		
100				0.00							
100 Waterjet FLOW CNC Waterje	et	Memo Cut as per d Prog Rev:_	~ ^	0.00				_25.			Jm B-5-17
307 1145		Dwg Rev:	<u>D</u>								
		Deburr as re	equired							•	
110		QC2- Inspect parts off m	nachine FAI/FAIB	0.00							\$
*11 0 *								2em	_		TMB-5-17

0.00

Memo

Quality Control

									C	QA:	Date:	
NCR: Y	es / No				WORK ORDER NON-	CON	FORM	MANCE / UPDATE				
									QA Clo	sed:	Date:	
					DISPOSITION	ł		AGAINST D	EPARTM	ENT,	/PROCESS	
Work Orde	r:				Rework	٦		Skid-tube Crosstube	٦		Water Jet	Engineering
Part N					Scrap	┨ ┠		Machining Small Fab	-	Pro	d. Eng. Coor.	Quality
raitiv	·	!			Use-as-is	1 I		noforming Finishing	Rec		re/Packaging	Other
NCR N	lo.				Work Order Update	┪┃		Large Fab Composite	7	•	Supplier	
						_						
Root				Descri	ption of work order update	In	itial	Action	Sign	&		
Cause	Date	Step	Qty		or Non-conformance	Chie	ef Eng	Description	Dat	:e	Verification	QC Inspector
Doc/Data		!										
Equip/Tooling						1						·
Operator												
Material												
Setup		1					, ,					
Other												
Process	_					ŀ						
Supplier						-						
Training	_											
Unapproved		1	<u>l</u> _				CATE	CORY			1	
					General	AULI	CATE	GURT		·		
Landin	ng Gear				Bend	\Box	Grain	Г	Ovalize	o d		Pressure/Forced
 	Bending	at Carias	i-+-	0/s	BOM/Route	-	Hardwa	-	_		tolerance	Temperature/Cure
		ot Conce	ntric (o	U/3 -	Broken/Damaged			ion Incomplete	Part In			Weld
	Crushed	! /Crimped			Burrs	\vdash	•	ions Incomplete/Unclear	Part Lo		 	Wrong Stock Pulled
	Cuffs	Сппрец	-		Contamination			enance	Part M		- L	J 2.18 2.22 auca
	Heat Tre	at		-	Countersink		Mislabe	<u>-</u>	Positio			

Misread Offset

Out of Calibration

Out of Sequence

Outside Dimensions

Other

Power Loss/Surge

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Inspection Strip in Tube

Torque Waves in Extrusion

Cut Too Short

Drill Holes

Drawing

Finish Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Work Orde April-22-13 12:.	er ID 100297 53:00 PM		*100			Page 2		
Item ID: Revision ID:	D4148-1		Accept *N900040100* Setup Sta					
	Crosstube Lug Plate, Fwd						Stop	*NS2*
Start Date: Required Date: Reference:	4/22/13 Start Qty: 2 5/03/13 Req'd Qty: 2	, –		Cust Item ID: Customer:				
Approvals:	Process Plan:	Date:	Tooling:	Date:		Run	Start	*NR1*
	QC:	Date:	SPC (Y/N):	Date:			Stop	*NR2*
Sequence ID/ Work Center II	Operation Description		Set Up/ Run Hours	Tool ID Tool #	Plan Acc Code Qty			Reject Insp. Number Stamp
120	QC8- Inspect part	ts - second check	0.00		a s			
120 QC Quality Control	Men	10	0.00		(O)]		- w
150	ldentify as per dw	vg & Stock Location:	45 0.00					
150	,	5 , , ,			\mathbf{a}	5×		
Packaging Packaging	Меп	10	0.00					13-15
170	OCAL Final law	ection - Work Order Release	0.00					11 1
*160 *160*	QC21- Final Insp	ection - work Order Release	0.00				13	15/21 9
QC Quality Control	Men		0.00				N	15/21/7
								-

160

NCR: \	Yes	/ No				WORK ORDER NON-O	CONFORI	MANCE / UPDAT	TE				
										QA Closed:	Date:		
Work Orde	۵r۰					DISPOSITION			AGAINST DE	EPARTMENT/PROCESS			
Part No						Rework Scrap Use-as-is Work Order Update	1 I	Machining S	Crosstube Small Fab Finishing omposite	1	Water Jet d. Eng. Coor. re/Packaging Supplier	Engineering Quality Other	
Root		•			Descri	ption of work order update	Initial	Action		Sign &			
Cause		Date	Step	Qty	(or Non-conformance	Chief Eng	Description	on	Date	Verification	QC Inspector	
Doc/Data													
Equip/Tooling													
Operator								}					
Material	\Box	•	1	<u> </u>									
Setup													
Other								,					
Process			!										
Supplier													
Training													
Unapproved			i										
						F	AULT CATE	GORY					
Landi	ng G	Gear				General				_		•	
		Bending				Bend	Grain			Ovalized		Pressure/Forced	
		Centre N	ot Conce	ntric to	o/s	BOM/Route	Hardwa	are		Over/Under	tolerance	Temperature/Cure	
	П	Cracks				Broken/Damaged	Inspect	rion Incomplete		Part Incorre	ct [Weld	

Instructions Incomplete/Unclear

Maintenance

Out of Calibration

Out of Sequence

Outside Dimensions

Mislabeled

Misread

Offset

Date:

Wrong Stock Pulled

Other

DQA:

Part Lost/Missing

Positioned Wrong

Power Loss/Surge

Part Moved

Turning Sequence

Wave/Twist in Tube

Ripples in Bend

Crushed/Crimped.

Inspection Strip in Tube

Torque Waves in Extrusion

Cuffs

Heat Treat

Burrs

Contamination

Countersink

Cut Too Short

Drill Holes

Drawing

Finish

Folio

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Picklist Print

April-22-13 12:53:00 PM

Work Order ID:

100297

Parent Item:

D4148-1

Parent Item Name:

Crosstube Lug Plate, Fwd

Start Date: 4/22/13

Required Date: 5/03/13

Page 1

Start Qty: 24.00

Required Qty: 24.00

Comments:

IPP Rev:A 10.06.24 new issue DD verf:EC

IPP Rev:B 10.10.29 as per revC DD verf:EC DWG REV.D DD VERF:EC

IPP REV:C 11.03.02 AS PER

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S11GA 304/316 0.125 Sheet		Purchased	No			100	sf	199.0300	0.3607	9 .112420 8 \O	}		J <u>m13-</u> 5-1

Loc Code Location Loc Qty MAT020 199.03 122521 24.93 124445 124445 174.1

											DQA:	Date:	
NCR: \	Yes	/ No				WORK ORDER NON-	COI	NFORM	/ANCE / UP	DATE		-	
			· · · · ·								QA Closed:	Date:	and the second of the second o
Work Orde	~ r·		ļ			DISPOSITION				AGAINST DE	PARTMENT	/PROCESS	
Work Orde	-			 .		- Rework	٦		Skid-tube	Crosstube	1	Water Jet	Engineering
Part N	νn					Scrap	1	l .	Machining	Small Fab	Pro	d. Eng. Coor.	Quality
, ,,,,,,	-					Use-as-is	1		noforming	Finishing	Rec/Sto	re/Packaging	Other
NCR N	No.		· · · · · · ·			Work Order Update]		Large Fab	Composite]	Supplier	
Root					Descri	ption of work order update		Initial	Ac	ction	Sign &		
Cause		Date	Step	Qty		or Non-conformance	Ch	nief Eng	Desc	cription	Date	Verification	QC Inspector
Doc/Data			1					-					¥s.
Equip/Tooling	Ш												
Operator						•							
Material													İ
Setup	Ш		· ·	İ									
Other				·	-			:					
Process													,
Supplier	Ш												
Training										:			
Unapproved											<u> </u>	<u>j</u>	
							AUI	LT CATE	GORY				
Landi	_				_	General	_	٦		<u></u>	٦		7
	${m H}$	Bending			_	Bend	ļ.,	Grain		-	Ovalized	 	Pressure/Forced
	-	Centre N	ot Concer	ntric to	O/S	BOM/Route	-	Hardwa			Over/Under	<u> </u>	Temperature/Cure
	\vdash	Cracks			<u>_</u>	Broken/Damaged	_	⊣ `	on Incomplete		Part Incorre		Weld
	-	Crushed/	Crimped.		<u> </u>	Burrs	-		ions Incomplete,	/Unclear	Part Lost/M	· · ·	Wrong Stock Pulled
	\vdash	Cuffs			_	Contamination	-	Mainte		·	Part Moved		•
	₩	Heat Trea				Countersink	_	Mislabe		·	Positioned	_	7
	ш	Inspectio	•	Tube		Cut Too Short	<u> </u>	Misread	i	L	Power Loss,	'Surge	Other
		Ripples in	Bend			Drill Holes		Offset					

Out of Calibration

Out of Sequence

Outside Dimensions

H:/FORMS/Quality Assurance\approved QA/NCRWO Rev G

Turning Sequence

Wave/Twist in Tube

Torque Waves in Extrusion

Drawing

Finish Folio

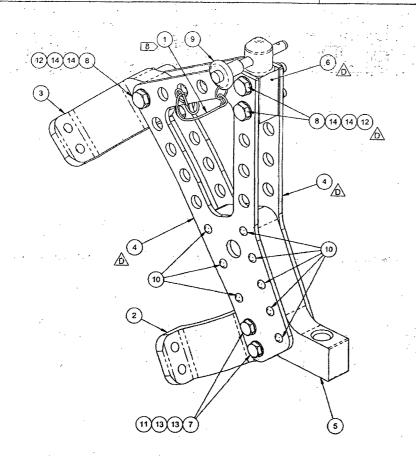
DART AEROSPACE LTD	, , , , , , , , , , , , , , , , , , , ,	Work Order:	100297
Description: Fwd Crosstube Lug Plate		Part Number:	D4148-1
Inspection Dwg: D4148 Rev: D			Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.129	+0.005/-0.001	0,129"	-	· · · · · · · · · · · · · · · · · · ·	V	Jkmoi
Ø0.191	+0.005/-0.001	0,191"	-		V	JK 11-30 [
Ø0.38	+0.006/-0.001	0.38"			V	
Ø0.257	+0.006/-0.001	0.258"	_		V	· · · · · · · · · · · · · · · · · · ·
Ø0.50	+0.008/-0.001	0,200,		,	V.	
0.94	+/-0.030	0,949	-		ν	1
4.47	+/-0.030	4.475"	-	·····	V	
0.750	+/-0.010	0753	-	······································	V	
. 8.47	+/-0.030	8,478"	-		V	Productora
8.096	+/-0.010	8.0991	_		v	14000000
5.43	+/-0.030	5.427"	-		v	
5.197	+/-0.010	6.191	_			
4.733	+/-0.010	4.740"	 		V	
0.310	+/-0.010	0.313"	-	· · · · · · · · · · · · · · · · · · ·	V.	
0.750	+/-0.010	0.752	_		V.	
0.375	+/-0.010	0.378,		······································	V	
1.84	+/-0.030	1.84"	_		V Sa-	
0.92	+/-0.030	0.92"			Ÿ	
3.000	+/-0.010	3.∞4"	1-		V	*1
··· ·· <u>-</u> 0.750	+/-0.010	0.751	F		V	
0.625	+/-0.010	6.633	~		Ů.	
1.982	+/-0.010	1.991"	-		V .	
0.991	+/-0.010	0.995			V	
0.77	+/-0.030	0.763"	-		V	
1.54	+/-0.030	1.531"			U	
2.47	+/-0.030	2.439"	-		V	
0.82	+/-0.030	0.89.	-		V	
3.57	+/-0.030	3-576"	_		V	
1.23	+/-0.030	1.2434	-		v	
0.73	+/-0.030	0.750"	-		v	, , , , , , , , , , , , , , , , , , , ,
0.125	+/-0.010	0.117"	-		<u>, </u>	
Ø0.252	+0.003/-0.000	(D'329),	-	· · · · · · · · · · · · · · · · · · ·	7 13	

Measured by:	JM	Audited by:	27	Preliminary Approval:	,
Date:	13-5-13	Date:	13 3 1	Date:	

Date	Change		Revised by	Approved
10.08.04	New Issue			Approved
10.10.08	Dwg Rev updated			
10.11.05	Dimensions updated per Dwg Rev C			
11.03.08	Dwg Rev updated			
12.02.01	Dimensions updated per Dwg Rev D			
	10.08.04 10.10.08 10.11.05 11.03.08	10.08.04 New Issue 10.10.08 Dwg Rev updated 10.11.05 Dimensions updated per Dwg Rev C 11.03.08 Dwg Rev updated	10.08.04 New Issue 10.10.08 Dwg Rev updated 10.11.05 Dimensions updated per Dwg Rev C 11.03.08 Dwg Rev updated	10.08.04 New Issue KU 10.10.08 Dwg Rev updated KJ 10.11.05 Dimensions updated per Dwg Rev C KJ 11.03.08 Dwg Rev updated KJ



	ITEM	QTY -041	P/N	DESCRIPTION
		Х	D4148-041	FWD X-TUBE LUG ASSY
	1	1	D2690-6	LANYARD
	2:	1	D3910-1	X-TUBE LUG
	3	- 1	D4091-1	MOUNTING LUG
سنم	4	2	D4148-1	FWD X-TUBE LUG PLATE
1	5	1	D4148-3	STUD RECEIVER LOWER
-	6	1	D4148-5	EYEBOLT STUD
	7	2	AN3C12A	BOLT
	8	3	AN4C13A	BOLT
7	9	1	MS17984-C413	PIP PIN
	10	8	MS20615-4M18	RIVET
1	11	2	MS21043C3	NUT
-	12	3	MS21043C4	NUT
	13	4	NAS1149C0332R	WASHER
L	14	6	NAS1149C0432R	WASHER

SULL FOR Λ_{i+1} M 100297 MU

#UK TO A

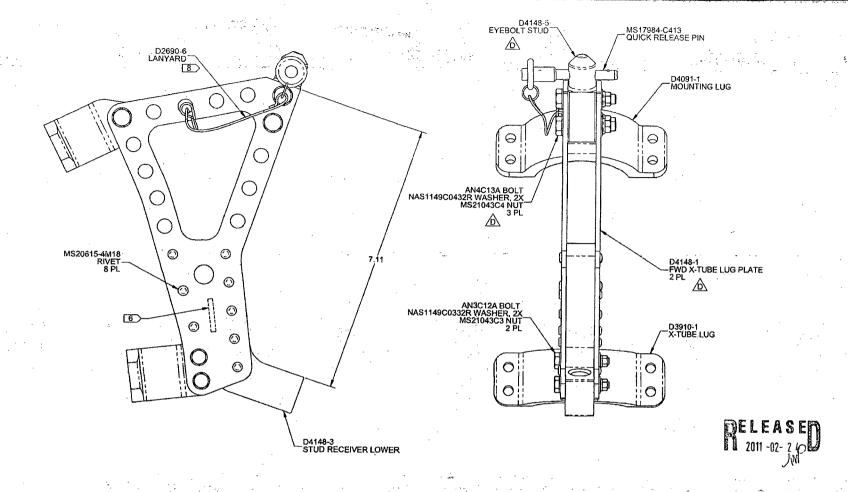
13-04-24

DESIGN	Vi .	MB	DAPT AFPOCE	ACE I	rn.
REV.			DESCRIPTION	BY	DATE
Α	NEW IS	SUE		MB	10.06.18
В	AN3C12 WASHE MS2061 Ø0.129 Ø0.191	A, MS21043-3 R (ZN D3-1, B7 5-4M20 (ZN D3 3 PL (ZN D6-3 WAS 0.129 (Z	\$20615-4M18 WITH OTY(2) EACH AND OTY(4) MAS1149C0332R 7-2 & 84-2); MS20815-4M18 WAS 3-1 & 87-2); Ø0.191 2 PL REPLACES); Ø0.129 °PL WAS 10 PL (2N A7-3); N C&51, D0-607-2 REV. B.	мв	10.07.05
С	REDES ISSUES	GNED D4148- WITH D350-5	1/-3 TO ADDRESS COMPATIBILITY 91 SHORT STEPS	мв	10.10.12
D	MS2104	ED TO 0.250° I3C3 AND QTY IA. MS21043C	TO 0.252" (D8-3); HOLE DIA (C8-5); REPLACED GTY(2) AN3C12A, (4) NAS1149C0332R WITH GTY(2) 4 AND GTY(4) NAS1149C0432R (D3-	sc	11.02.22

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	sc		
CHECKED	1	DRAWING NO.	REV. D
MFG. APPR.	Call	D4148	SHEET 1 OF 5
APPROVED	July	TITLE	SCALE
DE APPR.	-#	FWD X-TUBE LUG ASSY	NTS
DATE 11.02.22		COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DOCUMENT IS THEN THE AND COMPENSAL AND IS SUPPLIES ON THE EXPENSE ON THE PRESENCE OF THE PRESENCE	

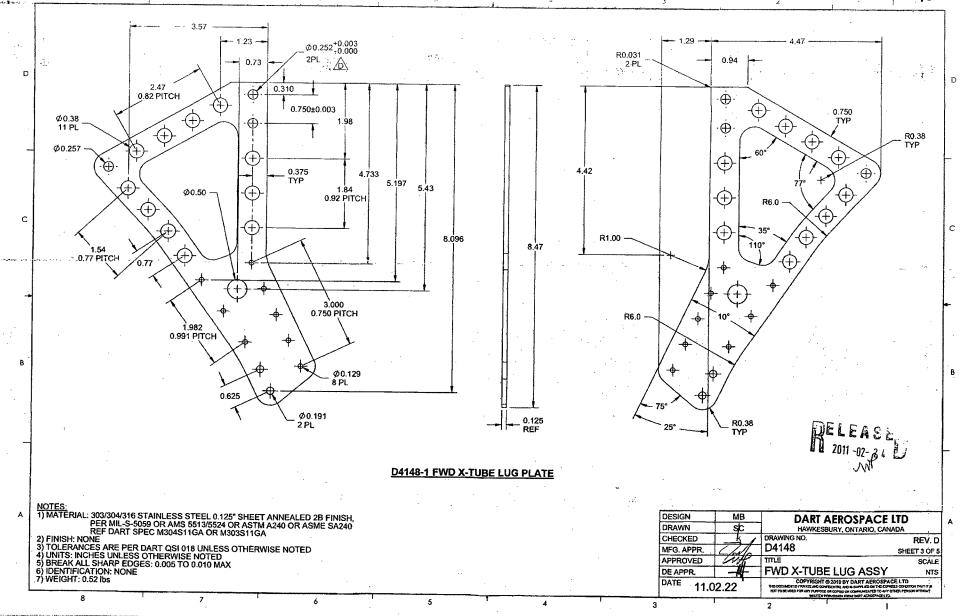
D4148-041 FWD X-TUBE LUG ASSY

NOTES;
1) MATERIAL: N/A
2) FINISH: NONE
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK SHARP EDGES: N/A
6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4148-041" PER DART QSI 044 6.1
7) WEIGHT: 3.67 lbs
8) ATTACH D2690-6 TO D4148-1 BY LOOPING AROUND A LIGHTENING HOLE FIRST AND THEN SECURE TO MS17984-C413

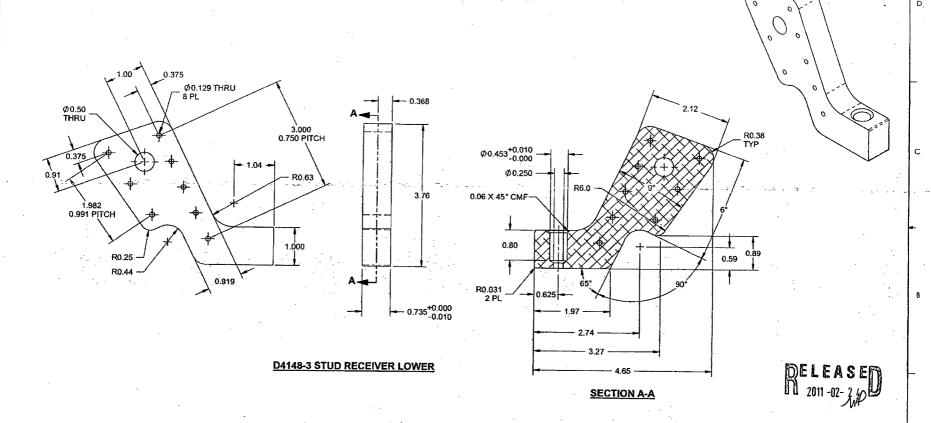


D4148-041 FWD X-TUBE LUG ASSY

			· ·
DESIGN	MŖ	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN .	s¢		
CHECKED	14/	DRAWING NO.	REV. D
MFG. APPR.	11	D4148	SHEET 2 OF 5
APPROVED	Juff	TITLE	SCALE
DE APPR.	_#	FWD X-TUBE LUG ASSY	NTS
DATE 11.02.22		COPYRIGHT © 2018 BY DART AEROSPACE LTD THIS COCUMENT IN PRIVATE AND CONTRICTION, AND BE EMPLED ON THE EXPRESS COMMITTED THE THE STATE OF THE EMPLEY OF THE EMPLEY OF THE STATE OF THE PRODUCT PRIVATE OF THE STATE OF THE PRODUCT PRIVATE OF THE STATE OF THE PRODUCT PRIVATE OF THE STATE OF THE PRODUCT PRIVATE OF THE STATE OF THE STA	

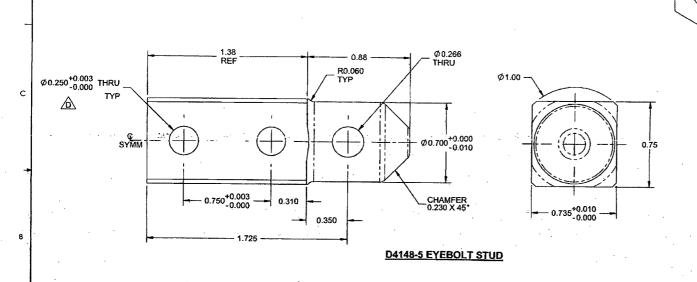






NOTES:
1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 1.52 lbs

DESIGN	MB,	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	sc		
CHECKED	M	DRAWING NO. REV. D	
MFG. APPR.	Touth	D4148 SHEET 4 OF 5	
APPROVED	MA	TITLE SCALE	
DE APPR.	-#	FWD X-TUBE LUG ASSY NTS	
DATE 11.02.22		COPYRIGHT © 2010 BY DART AEROSPACE LTD THIS DODANGE AMANT AND COMPONITAL AND IS EMPLIED ON THE EMPLIED CONDITION THAT IT IS NOT TO BE USED FOR ANY PREPOSE OR COMED ON COMMANDATE TO MAY INSTRUMENTAL PROPERTY PROMISED FOR ANY PROPERTY PROMISED BUT REPOSPECIATE. WHITE DESPRESSABLE FOR BUT REPOSPECIATE.	



NOTES:
1) MATERIAL: 303/304/316 STAINLESS STEEL BAR PER ASTM A582 OR ASTM A276
REF DART SPEC M304B OR M303B
2) FINISH: NONE
3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) BREAK ALL SHARP EDGES: 0.005 TO 0.010 MAX
6) IDENTIFICATION: NONE
7) WEIGHT: 0.27 lbs

DESIGN	MB	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	sc		
CHECKED	1	DRAWING NO.	REV. D
MFG. APPR.	Just	D4148	SHEET 5 OF
APPROVED	UF	TITLE	SCALE
DE APPR.	4	FWD X-TUBE LUG ASSY	NTS
DATE 11 02 22		COPYRIGHT © 2010 BY DART AEROSPACE LTD THE DOCUMENT IN PRINTE AND CONTROL AND COUNTRY AND CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL OF THE CONTROL CONTROL CONTROL OF THE CONTROL CONTR	

